UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/609,188	06/26/2003	Andrew James Edwards	3382-64713	7618

26119 7590 07/25/2007

KLARQUIST SPARKMAN LLP
121 S.W. SALMON STREET
SUITE 1600
PORTLAND, OR 97204

EXAMINER	
CHAVIS, JOHN Q	
ART UNIT	PAPER NUMBER
2193	
MAIL DATE	DELIVERY MODE
07/25/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/609,188	EDWARDS, ANDREW JAMES	
	Examiner	Art Unit	
	John Chavis	2193	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 June 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 February 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date 5/24/04
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-21 and 27-29 are rejected under 35 U.S.C. 102(e) as being anticipated by Pinter et al. (6,457,023).

We claim:	Pinter
1. A static data flow analysis method comprising: chasing a data flow instance through a data flow graph until a transition instruction is encountered;	See the title and the abstract. In reference to the chasing feature, this is the essence of data flow analysis, see fig. 9 , col. 1 line 65-col. 2 line 6 and col. 4 lines 57-65.
resolving the transition instruction to a procedure pointed to by a call graph;	See col. 2 lines 7-14, lines 41-65, col. 4 lines 35-43
and chasing the data flow instance into a data flow graph of the procedure.	See col. 5 lines 24-32.
2. The method of claim 1, further comprising: encountering a pointer dereference operand while chasing through a data flow graph;	See col. 7 lines 5-13.
chasing backward to resolve where the pointer points; and	See col. 7 lines 7-9.
continuing chasing the data flow instance from the resolved pointer	See the cited portions above and col. 7 line 44-50.

dereference operand.

3. The method of claim 1 wherein the procedure transition instruction is a call instruction, and the data flow instance chase is a forward chase.	See col. 8 lines 63-col. 9 line 4.
4. The method of claim 1 wherein the procedure transition instruction is a first instruction of a procedure, and the data flow instance chase is a backward chase.	In reference to the backward chase, Pinter provides for both upper and lower bound evaluations, see col. 9 lines 12-45.
5. The method of claim 1 wherein the data flow graphs contain pointers to an internal representation of a program.	See Pinter's claim 5.
6. The method of claim 5 wherein the internal representation comprises a graph data structure.	See Pinter's claim 4.
7. The method of claim 1 wherein the call graph contains pointers to an internal representation of a program.	See Pinter's claims 11 and 12.
8. The method of claim 2 wherein the resolved pointer dereference is a global type, and chasing continues at plural instructions that reference the global as operands.	See Pinter's claims 20-21 and col. 2 lines 15-26.
9. The method of claim 2 wherein the resolved pointer dereference is a field reference type, and chasing continues at plural instructions that reference the field reference as operands.	See Pinter's claims 22-23.
10. The method of claim 1, wherein a state machine directs data flow chase through alternating states comprising instruction change states and data transformation states.	See col. 9 lines 12-50 in which live states represent one state, while an alternating state is not live.
11. The method of claim 1 wherein the	See the rejection of claim 1 in view of

data flow graph of the procedure is built after the transition is resolved to the procedure.	Pinter's col. 3 lines 20-27.
12. The method of claim 1 wherein the inputs to the method comprise binary code, and	See col. 6 lines 20-25 in which bytes are considered binary. In fact computers are inherently considered to operate on binary information (code).
a start state comprises a data instance and an instruction address in the binary code.	

In reference to claims 13-14 and 18-19, see the rejection of claims 1-2.

As per claims 15-16, see the rejection of claims 9 and 8.

The features of claim 17 are taught via the rejection of claim 2 above.

Claim 20 is rejected as claim 3.

In reference to claim 21, see the rejection of claim 9.

As per claims 27-28, see the rejection of claims 8-9.

The features of claim 29 are taught via claim 6.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 22-26 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pinter et al. (6,457,023). The choices of the type of internal representation and whether edges are bi-directional are considered design choices that are not considered

to affect the creating of the internal representation of code; since some type of representation has to be used. Therefore, each of the selections are considered merely choices of design selectable based on the user's presentation preference. Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to provide various preferences in Pinter's system to enable different display types and to provide bi-directional data flow to further enhance communications between components.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Chavis whose telephone number is (571) 272-3720. The examiner can normally be reached on M-F, 9:00am-5:30pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jc

John Chavis
Primary Examiner AU-2193